

## Awareness about Complications of Diabetes among Diabetic Patients Attending Urban Health Training Centre, Katihar Medical College, Katihar

Faraze Ahmad<sup>1</sup>, Prawin Chandra<sup>2</sup>, Purnendu Kumar Singh<sup>3</sup>

<sup>1</sup>Junior Resident-III, Department of Community Medicine, Katihar Medical College, Katihar, Bihar, India

<sup>2</sup>Professor, Department of Community Medicine, Katihar Medical College, Katihar, Bihar, India

<sup>3</sup>Professor and Head, Department of Community Medicine, Katihar Medical College, Katihar, Bihar, India

---

Received: 26-01-2023 / Revised: 10-02-2023 / Accepted: 11-03-2023

Corresponding author: Dr Purnendu Kumar Singh

Conflict of interest: Nil

---

### Abstract

**Background:** Diabetes is a chronic disease, and a group of metabolic disorders which manifests as hyperglycemia for prolonged period that occurs either when the pancreas does not synthesize sufficient amount of insulin. Diabetes is an important public health issue and a priority non-communicable disease (NCDs) targeted for action.

**Objectives:** To assess the awareness levels of the diabetic patients attending the Urban Health Training Centre of Katihar Medical College regarding the complications of Diabetes Mellitus.

**Materials and Methods:** This is a cross sectional study which was conducted at Sharifganj, which is Urban Health Training Centre of Katihar Medical College, Katihar. The duration of this study was three months from August to October of 2021. This study was carried out among diabetic patients who were 30 years and above and were visiting UHTC, Sharifganj.

**Results:** This study was conducted among 107 diabetic patients aged 30 years & above and 52.33 % were males & 47.66 % were females.

The maximum burden of the disease was in the age group above 45 years i.e. 77.58 %. 81.30 % patients believed that diabetes cases were on the rise these days, 63.4% patients believed that Diabetes could be prevented. 75.6% subjects knew that Diabetes affects other organs.

**Conclusions:** It is a well-known fact that prolonged duration of Diabetes leads to various associated complications, lack of awareness & poor disease control contribute to disease related morbidity. Simple lifestyle modifications like regular exercise & diet control can go long way in dealing with Diabetes & its complications.

**Keywords:** Diabetes, Non-communicable disease, public health issue.

---

This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.

---

### Introduction

Diabetes is a chronic disease, and a group of metabolic disorders which manifests as hyperglycemia for prolonged period that

occurs either when the pancreas does not synthesize sufficient amount of insulin or when the body lacks the ability to effectively

utilize it. Diabetes is an important public health issue and a priority non-communicable disease (NCDs) targeted for action by global leaders. Worldwide, an estimated 422 million adults were afflicted with diabetes in 2014, compared to 108 million in 1980. Diabetes in its various forms and types can lead to multi organ complications of both microvascular and macrovascular types and can greatly increase the overall risk of dying prematurely [1].

Diabetes, if not treated correctly, will give way to a barrage of complications, like chronic kidney disease, retinopathy, coronary artery disease, strokes and diabetic foot ulcer. It can affect most of the body organs especially heart, blood vessels, kidneys, eyes, nerves and teeth. Death rates for heart disease and the risk of stroke are about 2–4 times higher among adults with diabetes than among the healthy population [2].

The complications of diabetes mellitus are the major health problem among diabetic patients, and it is a significant burden of care on the individual, health care professionals and the wider health system. Individuals with diabetes are 2-4 times more likely to develop cardiovascular disease relative to the general population and have a 2-5-fold greater risk of dying from these conditions [3]. According to WHO, the prevalence of diabetes is growing most rapidly in low- and middle-income countries [4]. The rapid socioeconomic change in conjunction with urbanization and

industrialization are the major factors for the global increase in the diabetes epidemic, with other associated risk factors such as population growth, unhealthy eating habits, and a sedentary lifestyle also playing an important role [5].

### **Materials & Methods**

The present study is a cross sectional study which was conducted at Sharifganj which is Urban Health Training Centre of Katihar Medical College, Katihar. The duration of this study was three months from August to October of 2021. This study was carried out among diabetic patients who were 30 years and above and were visiting UHTC, Sharifganj. The total sample size of the study was 107 diabetes patients. Diabetes patients aged 30 years and above visiting UHTC, Sharifganj and were willing to participate were included in the study. Patients not willing to participate in the study & those aged below 30 years were not included in the study. Data was collected through interview method, using a pre-tested and pre-designed questionnaire after taking informed consent.

### **Results**

This study was conducted in department of Community Medicine, Katihar Medical College, Katihar, Bihar. This study was conducted among 107 diabetic patients aged 30 years & above, 52.33 % were males & 47.66 % were females.

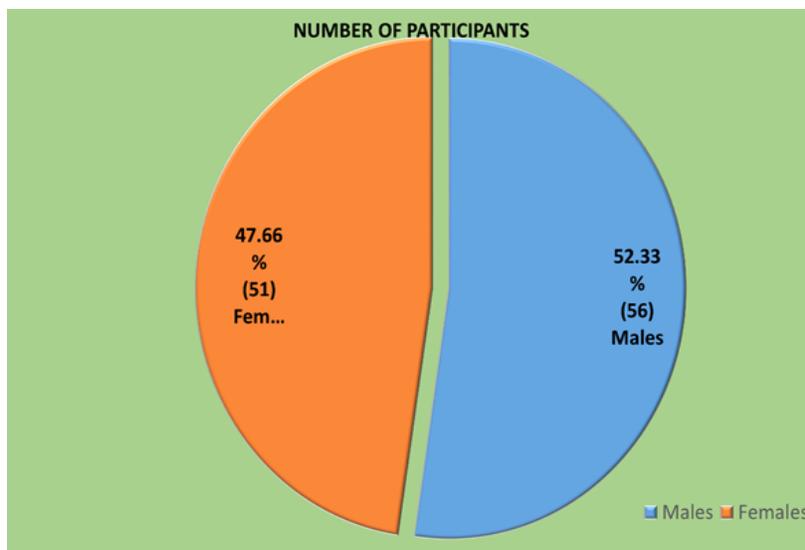


Figure 1: Number of male and female participants

Table 1: Number of diabetic patients according to age group.

Age Group	No. of Patients
30 - 35	9 (8.41%)
36 - 45	15 (14.01%)
46 -55	22 (20.57%)
56 - 65	29 (27.10%)
> 65	32 (29.91%)

The majority of patients 32 (29.91%) were above 65 years of age, among the 30–35-year-old age group only 8.41 % or 09 patients were present. The maximum burden of the disease was in the age group above 45 years i.e. 77.58 %.

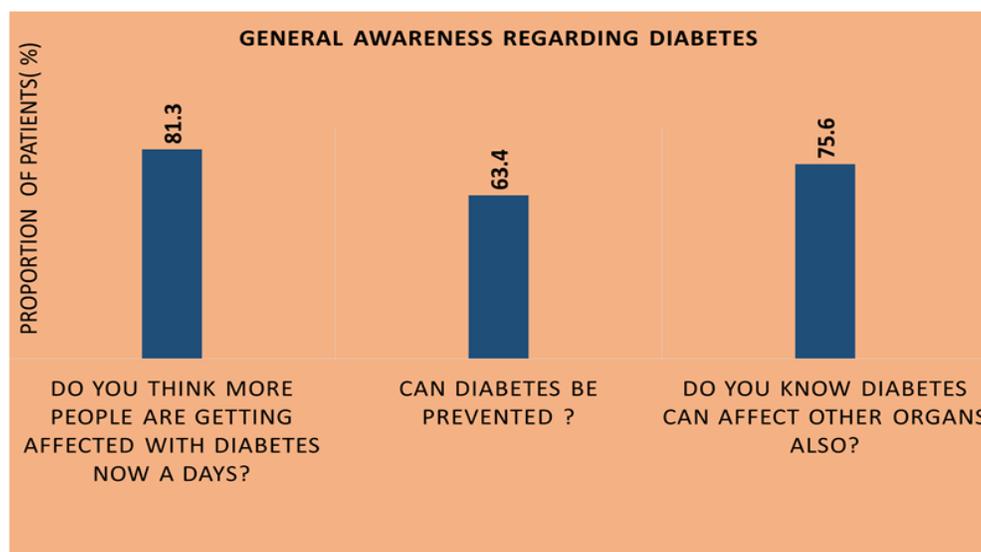
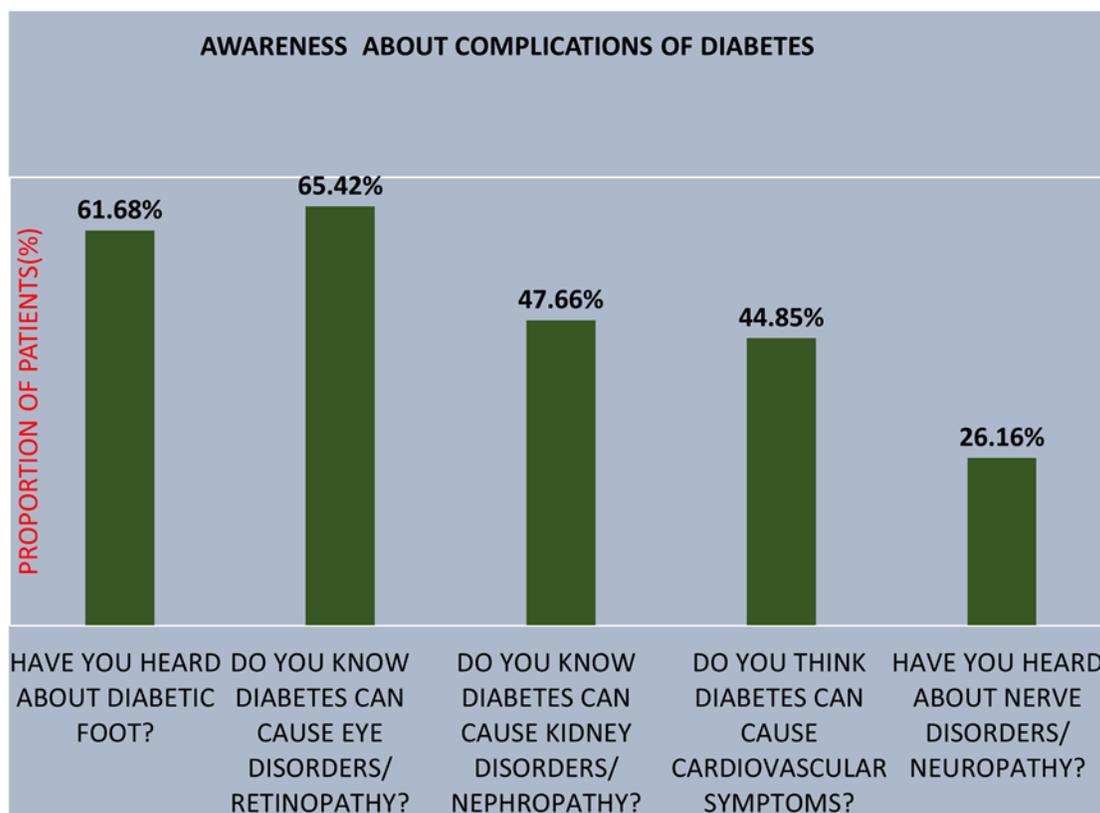


Figure 2: General awareness regarding diabetes.

81.3 % study participants thought that cases of diabetes were on rise, 63.4% thought that diabetes could be prevented. 75.6 % study participants understood that diabetes can affect other organs.



**Figure 3: Awareness about complications of diabetes**

61.68 % study participants knew about diabetic foot as complication of diabetes, retinopathy as a complication of diabetes was known by 65.42 % of diabetic patients, 47.66 % patients understood that diabetes can cause nephropathy. Cardiovascular disorders and neuropathy can be caused diabetes was known by 44.85 % and 26.16 % patients.

### Discussion

This study was conducted among 107 diabetic patients aged 30 years & above, 52.33 % were males & 47.66 % were females.

The maximum burden of the disease was in the age group above 45 years i.e. 77.58%. The majority of patients 32 (29.91%) were above 65 years of age, followed by 27.10 %

patients in the age group 56 – 65 years, 20.57 % in 46 – 55 year, 14.01 % in 36 – 45 year and 8.41 % in the age group of 30 – 35 years.

81.3 % study participants thought that cases of diabetes were on rise, 63.4% thought that diabetes could be prevented. 75.6 % study participants understood that diabetes can affect other organs also. In a study conducted by Somannavar S *et al* in Chennai, it was found that the awareness regarding diabetes was close to 81 % and around 74.1% people knew that there is rise in the cases of diabetes [6]. Significant section of the study participants felt that diabetes could be prevented, and that a combination of diet and exercise were needed to do so. Obesity, family history of diabetes, hypertension and

mental stress were cited as risk factors for the development of diabetes [6].

Herath, H.M.M. *et al* in their study conducted in Galle district in Sri Lanka found that 85% of the study subjects knew that diabetes could affect other organs also [7].

It was found that 61.68 % study participants knew about diabetic foot as complication of diabetes, retinopathy as a complication of diabetes was known by 65.42 % of diabetic patients, 47.66 % patients understood that diabetes can cause nephropathy. Cardiovascular disorders and neuropathy can be caused diabetes was known by 44.85 % and 26.16 % patients. It was reported by Hussain *et al* in their study that retinopathy as a complication of diabetes was known to 71.3% people [8].

Pavithra *et al* in their study conducted in South India found out that 61.5 % of people understood that foot ulcers can occur as a consequence of diabetes [9]. 45.2 % diabetic patients knew about the cardiovascular complications of diabetes mellitus in a study conducted by C. Muninarayana *et al* in Kolar district of Karnataka [10].

Shankar R *et al* in their study reported that awareness regarding diabetic neuropathy as a consequence of diabetes was less than 30 % among diabetes patients [11].

### Conclusion

It is a well-known fact that prolonged duration of Diabetes leads to various associated complications, lack of awareness & poor disease control contributes to disease related morbidity. Simple lifestyle modifications like regular exercise & diet control can go long way in dealing with Diabetes & its complications.

There is a need for greater awareness among the population both healthy & diseased to help prevent or delay the onset of Diabetes related complications.

### References

1. World Health Organization. Global Report on Diabetes. Isbn [Internet] 2016; 978: 88.
2. Chandra A, Rao R, Pr S, D DP, Alex R (2016) Questionnaire for the Assessment of Knowledge regarding Diabetes 9: 7-11.
3. Tracey ML, Gilmartin M, Neill KO, Fitzgerald AP, Mchugh SM. Epidemiology of diabetes and complications among adults in the Republic of Ireland 1998-2015?: A systematic review and meta-analysis. 2016; 16: 132
4. World Health Organization. Diabetes. [Last accessed on 2022 Oct]. Available from: [https://www.who.int/health-topics/diabetes#tab=tab\\_1](https://www.who.int/health-topics/diabetes#tab=tab_1).
5. Pradeepa R, Mohan V. Prevalence of type 2 diabetes and its complications in India and economic costs to the nation. Eur J Clin Nutr. 2017; 71:816–24.
6. Somannavar S, Lanthorn H, Deepa M, Pradeepa R, Rema M, Mohan V. Increased awareness about diabetes and its complications in a whole city: effectiveness of the "prevention, awareness, counselling and evaluation" [PACE] Diabetes Project [PACE-6]. J Assoc Physicians India. 2008 Jul; 56:497-502.
7. Herath, H.M.M., Weerasinghe, N.P., Dias, H. *et al*. Knowledge, attitude and practice related to diabetes mellitus among the general public in Galle district in Southern Sri Lanka: a pilot study. BMC Public Health 2017; 17: 535.
8. Hussain, Rameez; Rajesh, Bindu; Giridhar, Anantharaman; Gopalakrishnan, Mahesh; Sadasivan, Sanjail; James, Justin1; Vijayan, Pradeep Padickal1; John, Nelson2. Knowledge and awareness about diabetes mellitus and diabetic retinopathy in suburban population of a South Indian state and its

- practice among the patients with diabetes mellitus: A population-based study. Indian Journal of Ophthalmology. April 2016; 64(4): 272-276.
9. Pavithra H, Akshaya KM, Nirgude AS, Balakrishna AG. Factors associated with awareness and practice about foot care among patients admitted with diabetes mellitus: A cross sectional research from a medical college hospital of southern India. Nepal J Epidemiol. 2020 Sep 30;10(3):897-904.
  10. Muninarayana C, Balachandra G, Hiremath SG, Iyengar K, Anil NS. Prevalence and awareness regarding diabetes mellitus in rural tamaka, Kolar. Int J Diab Dev Ctries, January-March 2010; 30(1).
  11. Shankar R, Das AK, Vijay VJ, Mohan V. Challenges in Diabetes care in India: sheer numbers, lack of awareness and inadequate control. Journal of the association of Physicians of India. June 2008. Volume 56.